

with body mass index (BMI), and we acknowledge concerns Krachler et al. mentioned regarding the possible error in calculating METs in obese patients during load-bearing exercise, in particular when comparing normal weight patients with obese patients. However, in the CARDIO-FIT study, the mean BMI was not different between the CRF groups at baseline and could not have resulted in a selection or ascertainment bias. We are therefore confident that, in the absence of any between-group differences in BMI, our study findings remain valid regardless of the measurement used to score CRF.

Another seminal finding of the study was the effect of CRF gain on AF outcome. Individuals who gained CRF of  $\geq 2$  METs had significantly greater weight loss. A previous study showed minor difference in the degree of underestimation of peak METs for each 5-unit change in BMI (3). In our study, the mean weight loss in the  $\geq 2$  MET gain group was 3.9 kg/m<sup>2</sup> and was unlikely to have resulted in significant alteration in the MET measurement. A gain of  $\geq 2$  MET in CRF was associated with 2-fold greater freedom from AF. This gain was above the benefit conferred by the weight loss alone in these patients, highlighting the prescriptive role of exercise in managing patients with AF.

Finally, the CARDIO-FIT study emphasizes the importance of incremental benefit of gain in CRF through a structured exercise program along with weight-loss, on freedom from AF. The study does not advocate a “fitness first approach.” Benefit from the “alliance of CRF with weight-loss” is truly over and above the strategic gain provided by each individually. Recent studies have demonstrated the beneficial effect of weight and risk factor management on long-term freedom from AF (4,5). In summary, we strongly advocate a multimodal approach to lifestyle modification. A structured exercise program to increase CRF should be an integral component of the management strategy for AF, particularly in the strategy of rhythm control.

Rajeev K. Pathak, MBBS

Adrian D. Elliott, PhD

Rajiv Mahajan, MD, PhD

Dennis H. Lau, MBBS, PhD

\*Prashanthan Sanders, MBBS, PhD

\*Centre for Heart Rhythm Disorders

Department of Cardiology

Royal Adelaide Hospital

L5 McEwin Building

North Terrace

Adelaide 5000

Australia

E-mail: [prash.sanders@adelaide.edu.au](mailto:prash.sanders@adelaide.edu.au)

<http://dx.doi.org/10.1016/j.jacc.2015.10.069>

Please note: Dr. Pathak is supported by a Postgraduate Scholarship from the Lion's Medical Research Foundation, an Australian Postgraduate Award, and a Leo J. Mahar Electrophysiology Scholarships from the University of Adelaide. Dr. Mahajan is supported by a Leo J. Mahar Lectureship from the University of Adelaide. Dr. Lau is supported by a postdoctoral fellowship from the National Health and Medical Research Council of Australia and a Robert J. Craig Lectureship from the University of Adelaide. Dr. Sanders is supported by practitioner fellowships from the National Health and Medical Research Council of Australia and by National Heart Foundation of Australia. Dr. Sanders served on the advisory board of and has received lecture and/or consulting fees from Biosense-Webster, Medtronic, and St. Jude Medical; and has received research funding from Medtronic, St Jude Medical, Boston Scientific, Biotronik, and Sorin.

## REFERENCES

1. Pathak RK, Elliott A, Middeldorp ME, et al. Impact of CARDIOrespiratory FITness on arrhythmia recurrence in obese individuals with atrial fibrillation: the CARDIO-FIT Study. *J Am Coll Cardiol* 2015;66:985-96.
2. Lee DC, Sui X, Artero EG, et al. Long-term effects of changes in cardiorespiratory fitness and body mass index on all-cause and cardiovascular disease mortality in men: the aerobics center longitudinal study. *Circulation* 2011;124:2483-90.
3. Wilms B, Ernst B, Thurnheer M, Weisser B, Schultes B. Correction factors for the calculation of metabolic equivalents (MET) in overweight to extremely obese subjects. *Int J Obes (Lond)* 2014;38:1383-7.
4. Pathak RK, Middeldorp ME, Lau DH, et al. Aggressive risk factor reduction study for atrial fibrillation and implications for the outcome of ablation: the ARREST-AF cohort study. *J Am Coll Cardiol* 2014;64:2222-31.
5. Pathak RK, Middeldorp ME, Meredith M, et al. Long-term effect of goal-directed weight management in an atrial fibrillation cohort: a long-term follow-up study (LEGACY). *J Am Coll Cardiol* 2015;65:2159-69.

## The ASCVD Risk Estimator App



### From Concept to the Current State

Initial incorporation of the 2013 Blood Cholesterol Guidelines (1) into clinical practice came with a particular challenge. Providers were asked to assess atherosclerotic cardiovascular disease (ASCVD) risk by manually entering data into an electronic spreadsheet, using the Omnibus Risk Estimator (2). Not only was this an impractical solution for nearly all providers at the point of care, it also severely limited patients' ability to engage in risk assessment.

The solution was obvious, we needed a point-of-care tool that would allow providers the ability to easily calculate 10-year ASCVD risk, and although such a stand-alone tool would certainly be valuable, we recognized that this represented an opportunity to do so much more. This, in essence, is the history of the ASCVD risk estimator application software (app).

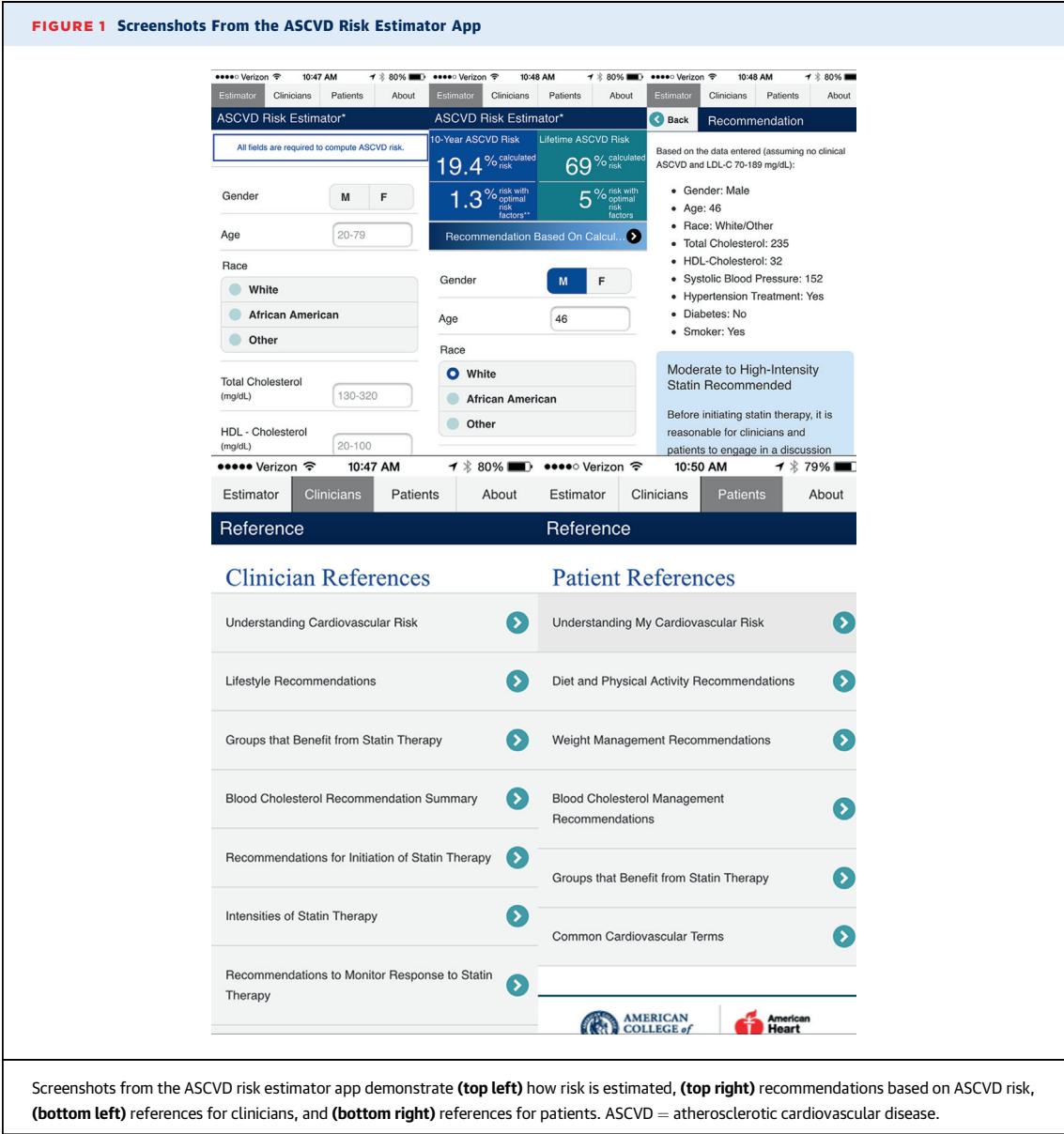
On February 10, 2014, the ASCVD risk estimator was made available for free by the American College of Cardiology and American Heart Association, both on the internet and as an app on iTunes

and Google Play (Figure 1). To date, there have been >3.9 million internet/app visits and over 240,000 app downloads. On average, it is used >11,000 times each day.

Although the app has received positive feedback, including being rated the best medical app by MedPage in 2014 (3), there is room for improvement. Most pressing for us is a desire to better inform individuals that a predicted ASCVD risk of  $\geq 7.5\%$  should not automatically lead to a statin prescription. Often misunderstood, the guideline actually recommends that these primary prevention patients first enter into a dialogue with their clinician about: 1) the anticipated benefits and potential adverse effects associated with

statin therapy; 2) the risk of drug-drug interactions; 3) the importance of addressing other risk factors; and 4) inclusion of an informed patient's preference. This clinician-patient risk discussion is an important first step in patient engagement and can be a powerful aid to improve not only medical decision making but, if a statin is chosen, medication adherence.

It is for these reasons that the app was recently highlighted as an effective tool to implement shared decision making (4). Simply put, the app is a decision aid that can be used by patients and care providers, either together during the clinical encounter or separately between visits. Used appropriately, this app empowers more patients to *know their risk* and



more care providers to discuss *what can be done to improve it*.

\*Ty J. Gluckman, MD

Richard J. Kovacs, MD

Neil J. Stone, MD

Dino Damalas, MBA

J. Brendan Mullen, BSFA

William J. Oetgen, MD, MBA

\*Providence Heart and Vascular Institute

9205 SW Barnes Road

Portland, Oregon 97255

E-mail: [tyler.gluckman@providence.org](mailto:tyler.gluckman@providence.org)

<http://dx.doi.org/10.1016/j.jacc.2015.10.068>

Please note: The authors have reported that they have no relationships relevant to the contents of this paper to disclose.

## REFERENCES

1. Stone NJ, Robinson JG, Lichtenstein AH, et al. 2013 ACC/AHA guideline on the treatment of blood cholesterol to reduce atherosclerotic cardiovascular risk in adults. *J Am Coll Cardiol* 2014;63:2889-934.
2. Omnibus Risk Estimator. Available at: [http://static.heart.org/ahamah/risk/Omnibus\\_Risk\\_Estimator.xls](http://static.heart.org/ahamah/risk/Omnibus_Risk_Estimator.xls). Accessed September 3, 2015.
3. Best medical apps released in 2014. iMedical Apps, MedPage Today. Available at: <http://www.imedicalapps.com/2014/12/best-medical-apps-released-2014/12/>. Accessed June 20, 2015.
4. Martin SS, Sperling LS, Blaha MJ, et al. Clinician-patient risk discussion for atherosclerotic cardiovascular disease prevention. *J Am Coll Cardiol* 2015;65:1361-8.